

ANew SPECIES OF *Cyrtarachne*, THORELL, 1868 (ARANEAE: ARANEIDAE: CYRTARACHNINAE) FROM THE SACRED GROVE FORESTS OF CENTRAL WESTERN GHATS, INDIA.

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ABSTRACT

A new species of cryptic cyrtarachnine araneid, *Cyrtarachne sunjoymongai* sp. nov. is described from the 'Kans'; sacred grove forests of Shivamogga, Karnataka, India.

Key Words: Araneidae, Cyrtarachninae, *Cyrtarachne*, India, Karnataka, Shivamogga, nouveau taxon, taxonomy, natural history.

INTRODUCTION

The 'Kans' of Shivamogga, Karnataka, are specialized forestlands harboring unique micro-climatic conditions, and consisting of evergreen and semi-evergreen vegetation, surrounded by deciduous forest (Hemanjali *et al.*, 2015).

While these ecologically sensitive habitats have been traditionally preserved by generations of village communities as sacred groves, they are being rapidly encroached upon, and actively destroyed (Sudarshan *et al.*, 2012).

The present report describes a new species of *Cyrtarachne* Thorell, 1868 from the 'Kans' of Hosanagara taluk, in Shivamogga, Karnataka, India.

Members of the genus constitute small, cryptic araneids, characterized by the following traits: prosoma convex, without hair; lateral eyes close together, sub-equal in size; opisthosoma wider than long, overlapping the carapace, strongly convex, large, leathery, bearing distinct markings or sigillae dorsally; epigynum with or without scape, varied in structure (Kim & Lee, 2012).

Heretofore represented by 54 species globally, 7 are endemic to India (Ahmed *et al.*, 2015 in press; Malamel *et al.*, 2015; WSC, 2015).

MATERIALS AND METHODS

Holotype female visually detected and hand collected, during a survey conducted to document the Araneae of the 'Kans' of central western ghats, Shivamogga, Karnataka.

Specimen photographed *in-situ* with a Nikon D7200 DSLR, utilizing a 50mm Yashica lens, reversed with extension tubes, and a Vivitar electronic flash paired with a homemade diffuser; subsequently euthanized and preserved in 80% ethanol.

Female genitalia excised, cleared and examined under a stereo zoom microscope; measurements provided are in mm and were taken using a digital caliper; leg measurements are provided as follows: Total (femur, patella, tibia, metatarsus, tarsus).

Terminology used follows Dondale *et al.*, 2003. Type material examined and deposited in the repository of the Forest Training Institute, Chikhaldara, Amravati.

Taxonomy

Cyrtarachne Thorell, 1868

Cyrtarachne sunjoymongai sp. nov.

(Figures 1-5)

Type Specimen

Holotype female, Hosanagara taluka, Shivamogga district, Karnataka. 13.92°N 75.07°E, 18.x.2015. Sumukha J. N.

Etymology

The specific name is respectfully dedicated to Mr. Sunjoy Monga, perhaps the country's finest ornithologist, author and natural historian; mentor and friend, in honor of his ceaseless and ongoing endeavor to understand and document the avi-fauna, ecology and bio-diversity of the Mumbai region, and indeed the Indian sub-continent; for taking the fine art of bird watching back to its roots, to the halcyon days of Salim Ali and Humayun Abdulali, a fun, relaxing pursuit, accessible to anyone with patience and curiosity, and for popularizing natural history and making it accessible to the common man, through his many wonderful books, a myriad of popular articles, and nature excursions conducted for the benefit of the citizens of the Mumbai metropolitan, all year round.

Diagnosis

Cyrtarachne sunjoymongai sp. nov. can be distinguished from all congeners by a combination of the following characters, namely, epigyne approximately rectangular, bearing widely separated, flat, oblong lateral sclerites. Atrium thinly sclerotized, scalloped. Scape absent.

Spermathecae deep-amber, bulbous; ovoid and acutely angled, rounded anteriorly, narrowing posteriad; distally darker (Figure 5).

Ostensibly resembles the following species: *C. inaequalis* Thorell, 1895, *C. bufo* (Bösenberg & Strand, 1906), *C. raniceps* Pocock, 1900, *C. fangchengensis* Yin & Zhao, 1994, *C. hubeiensis* Yin & Zhao, 1994, *C. akirai* Tanikawa, 2013, *C. jucunda* Tanikawa, 2013, but can be easily distinguished from all by the epigyne being structurally different; rectangular, possessing a scalloped, sclerotized rim and lacking a scape.

Internal genitalia structure somewhat similar to *C. fangchengensis* and *C. hubeiensis*, but differs in the following key characteristics:

Position of spermathecae acutely angled, instead of straight, as in *C. fangchengensis*. Epigyne also structurally different, being rectangular and without scape, bearing a scalloped, thinly sclerotized anterior rim, as opposed sub-circular, with a short, wide scape.



Figure - 1, *Cyrtarachne sunjoymongai* sp. nov. (Dorsal view)



Figure - 2, *Cyrtarachne sunjoymongai* sp. nov. (Anterior view)



Figure - 3, Three-dimensional brood-web of *Cyrtarachne sunjoymongai* sp. nov., with close-up of spider, and egg-sac (inset)

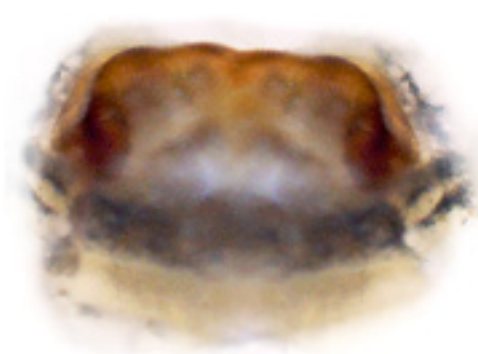


Figure - 4, Epigyne (Ventral view) of *Cyrtarachne sunjoymongai* sp. nov.



0.5 mm

Figure - 5, Epigyne (Dorsal view) of *Cyrtarachne sunjoymongai* sp. nov.

Spermathecae in *C. hubeiensis* thinly stalked, widely separated, with small, inwardly curved, distal hooks; epigyne with cordiform scape (Tanikawa, 2013; Kim & Lee, 2012; Yin & Zhao, 1994; Tikader & Biswas, 1981; Tikader, 1961).

Description

Female (Holotype): Prosoma 3.73mm long, 3.44mm wide. Opisthosoma 7.58mm long, 8.28mm wide. Leg measurements: I 8.75 (2.86, 1.45, 2.06, 1.77, 0.61), II 8.37 (2.73, 1.40, 1.98, 1.67, 0.59), III 5.16 (1.80, 0.82, 1.11, 0.99, 0.44), IV 7.89 (2.83, 1.30, 1.80, 1.45, 0.51).

Opisthosoma light orange in color, broadly truncated anteriorly, with a short, nebulous median band ; approximately triangular in shape, convex, with two distinct chestnut-brown, antero-lateral protuberances, partly ringed laterally by thin, dark brown bands, and possessing creamy-white swirls; tips caramel colored, glossy.

Prosoma convex, granulate; dull green medially, pale yellow laterally. Legs light yellow; meta-tarsi and tarsi, darker; dull green in color.

Epigyne as in Diagnosis. Male unknown.

Distribution

Presently known only from a small patch of 'Kans' forest in Hosanagara taluka, Shivamogga district, Karnataka.

Natural History

A small, cryptic, presumably nocturnal, araneid which seems to mimic terrestrial pulmonate gastropod mollusks, especially when viewed laterally, perhaps affording it some protection against potential predators, such as small birds.

Holotype female located on the underside of a pinnate compound leaf, of an unidentified plant, six feet from ground level.

Spins a long, shallow three-dimensional web, inside of which is suspended a small, dull reddish-orange egg sac, ostensibly resembling a dried fruiting body (Figure 3).

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